

WHAT IS CLAIMED IS:

1 1. A computer-implemented method of validating metadata in an object
2 model stored in a database, comprising:

3 identifying a first subject of validation, wherein the first subject is one of an
4 object, an attribute, an association and a collection of objects;

5 determining a context of metadata validation based on the first subject, the
6 context including one of a) the first subject, and b) the first subject and one or more
7 additional subjects;

8 determining one or more validation rules for each subject in the context; and
9 applying the determined validation rules to each subject in the context.

1 2. The method of claim 1, wherein each subject is a meta metadata object
2 selected from the group consisting of a MetaAttribute, a MetaAssociation, a
3 MetaAssociationEnd, a MetaClass and a MetaCollection.

1 3. The method of claim 1, wherein identifying includes receiving an
2 indication from a user interface module, said indication identifying the first subject.

1 4. The method of claim 1, wherein identifying includes receiving an
2 indication from a configuration management module, said indication identifying the first
3 subject.

1 5. The method of claim 1, wherein identifying includes receiving an
2 update indication identifying the first subject in response to a modification of the first subject.

1 6. The method of claim 1, wherein each of the one or more validation
2 rules is one of a correctness type rule and a completeness type rule.

1 7. The method of claim 1, wherein the first subject is a root object for a
2 collection of associated objects.

1 8. The method of claim 7, wherein the collection of objects is a
2 deployable collection including all objects transitively associated with the root object.

1 9. The method of claim 7, wherein the collection of objects is an
2 aggregated collection including the root object and all of its strongly aggregated child objects
3 recursively.

1 10. The method of claim 1, wherein determining a context includes:
2 a) traversing all associations with a root object to identify target objects;
3 b) repeating a) for each target object, with each target object as the root object;
4 and
5 c) generating a list of all target objects, wherein said list of objects represents a
6 transitive closure based on the root object.

1 11. The method of claim 10, wherein determining a context is
2 implemented using queries written in the Java language or a meta-language (METALANG)
3 or both.

1 12. The method of claim 10, wherein the list of objects forms the context
2 for validation.

1 13. The method of claim 10, wherein the first subject is the root object.

1 14. The method of claim 1, wherein determining one or more validation
2 rules includes identifying rules in rule files based on the subject type of each subject to be
3 validated.

1 15. The method of claim 14, wherein each rule file is a Java file.

1 16. The method of claim 1, wherein each subject in the context is one of an
2 instance of an object, an instance of an object containing an attribute, an instance of an object
3 having an association and an instance of root object of a deployable unit of a collection of
4 objects.

1 17. A metadata validation system for validating an object model,
2 comprising:
3 a database that stores the objects and metadata of the object model;
4 means for identifying a first subject of validation, wherein the first subject
5 type is one of an object, an attribute, an association and a collection of objects;

means for determining a context of metadata validation based on the first subject, the context including one of a) the first subject, and b) the first subject and one or more additional subjects;

means for determining one or more validation rules for each subject in the context; and

mean for applying the determined validation rules to each subject in the context.

18. The system of claim 17, wherein each subject is a meta metadata object selected from the group consisting of a MetaAttribute, a MetaAssociation, a MetaAssociationEnd, a MetaClass and a MetaCollection.

19. A method of validating metadata in an object model in a database, the method comprising:

receiving user defined rules, each rule defining a validation rule on a meta metadata object, each rule being one of a completeness type rule and a correctness type rule; storing the validation rules to the database;

identifying a first subject of metadata validation, wherein the first subject has a subject type selected from the group consisting of an attribute, an association, an object and a collection of objects;

determining a context of validation based on the first subject, wherein the context includes the first subject and none, one or more additional subjects;

determining one or more validation rules for each subject in the context based on the subject type of each subject; and

applying the validation rules to each of the determined subjects.

20. The method of claim 19, wherein each subject is a meta metadata object selected from the group consisting of a MetaAttribute, a MetaAssociation, a MetaAssociationEnd, a MetaClass and a MetaCollection.

21. The method of claim 19, wherein identifying a first subject includes receiving an indication from one of a user interface module and a configuration management module, the indication identifying an instance of an object in the database.

22. The method of claim 19, wherein the first subject is a root object for a collection of associated objects.

1 23. The method of claim 22, wherein the collection of objects is one of a
2 deployable collection including all objects transitively associated with the root object and an
3 aggregated collection including the root object and its child objects, wherein the child objects
4 are objects that are strongly aggregated to the root object recursively.

1 24. The method of claim 22, wherein determining a context includes:
2 a) traversing all associations with the root object to identify target objects;
3 b) repeating a) for each target object, with each target object as the root object;
4 and
5 c) generating a list of all target objects, wherein said list of objects represents a
6 transitive closure based on the root object.

1 25. The method of claim 19, wherein determining one or more validation
2 rules includes identifying rules in rule files based on the subject type of each subject to be
3 validated.

1 26. The method of claim 19, wherein storing the validation rules to the
2 database includes:
3 storing metadata describing the validation rules to the database; and
4 storing the validation rules to one or more Java files.